MATTEO RIONDATO
Curriculum vitae

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EDUCATION

Ph.D.	Computer Science, Brown University, 2014
M.Sc.	Computer Science, Brown University, 2010
M.Sc. (Laurea Specialistica)	Computer Engineering, University of Padua (Italy), 2009
B.Sc. (Laurea)	Information Engineering, University of Padua (Italy), 2007

ACADEMIC APPOINTMENTS

2016–	Visiting Assistant Professor, Department of Computer Science, Brown University
2015	Postdoctoral Research Associate, Department of Computer Science, Brown University
2014–15	Postdoctoral Researcher, Department of Computer Science, Stanford University

INDUSTRY POSITIONS

2015–	Research Scientist, Labs, Two Sigma Investments LP
2013	Summer Intern Research Scientist, Web Mining Group, Yahoo Research Barcelona

PUBLICATIONS
*: equal participation by all authors

Journal Articles

In press	**M. Riondato**, David García-Soriano, and F. Bonchi. Graph Summarization with Quality Guarantees. *Data Mining and Knowledge Discovery*, DOI:

10.1007/s10618-016-0468-8

2015 **M. Riondato** and E. M. Kornaropoulos. Fast Approximation of Betweenness Centrality through Sampling. *Data Mining and Knowledge Discovery*, 30(2):438–475

2014 **M. Riondato** and E. Upfal. Efficient Discovery of Association Rules and Frequent Itemsets through Sampling with Tight Performance Guarantees. *ACM Transactions on Knowledge Discovery from Data*, 8(4):20:1–20:32

2010 * A. Pietracaprina, **M. Riondato**, E. Upfal, and F. Vandin. Mining Top-k Frequent Itemsets through Progressive Sampling. *Data Mining and Knowledge Discovery,* 21(2):310–326

Conference Proceedings

2016 * L. De Stefani, A. Epasto, **M. Riondato**, and E. Upfal. TRIÉST: Counting Local and Global Triangles in Fully-dynamic Streams with Fixed Memory Size. *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), pp. 825–834, **Best Student Paper Award (Research Track)**

2016 **M. Riondato** and E. Upfal. ABRA: Approximating Betweenness Centrality in Static and Dynamic Graphs with Rademacher Averages. *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), pp. 1145–1154

2016 * F. Bonchi, G. De Francisci Morales, **M. Riondato**, Centrality Measures on Big Graphs: Exact, Approximated, and Distributed Algorithms. *Proceedings of the 25th International World Wide Web Conference* (WWW), Companion Volume, pp. 1017–1020

2016 A. Mahmoody, **M. Riondato**, and E. Upfal. Wiggins: Detecting Valuable Information in Dynamic Networks with Limited Resources. *Proceedings of the 9th ACM International Conference on Web Search and Data Mining* (WSDM), pp. 677–686

2015 **M. Riondato** and E. Upfal. Mining Frequent Itemsets through Progressive Sampling with Rademacher Averages. *Proceedings of the 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), pp. 1005–1014

2015 **M. Riondato** and E. Upfal. VC-Dimension and Rademacher Averages: From Statistical Learning Theory to Sampling Algorithms. *Proceedings of the 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), pp. 2321–2322

2015 * A. Anagnastopoulos, L. Becchetti, A. Fazzone, I. Mele, and **M. Riondato**. The

Importance of Being Experts: Efficient Max-Finding in Crowdsourcing. *Proceedings of the 36th ACM SIGMOD International Conference on Management of Data* (SIGMOD), pp. 983–998

2014   **M. Riondato**, D. García-Soriano, and F. Bonchi. Graph Summarization with Quality Guarantees. *Proceedings of the 14th IEEE International Conference on Data Mining* (ICDM), pp. 947–952

2014   **M. Riondato**. Sampling-based Data Mining Algorithms: Modern Techniques and Case Studies. *Proceedings of the European Conference on Machine Learning and Principle and Practice of Knowledge Discovery in Databases* (ECML PKDD), pp. 516–519

2014   **M. Riondato** and F. Vandin. Finding the True Frequent Itemsets. *Proceedings of the 14th SIAM International Conference on Data Mining* (SDM), pp. 497–505

2014   **M. Riondato** and E. M. Kornaropoulos. Fast Approximation of Betweenness Centrality through Sampling. *Proceedings of the 7th ACM International Conference on Web Search and Data Mining* (WSDM), pp. 413–422

2012   **M. Riondato**, J. A. DeBrabant, R. Fonseca, and E. Upfal. PARMA: A Parallel Randomized Algorithm for Association Rules Mining in MapReduce. *Proceedings of the 21st ACM International Conference on Information and Knowledge Management* (CIKM), pp. 85–94

2012   **M. Riondato** and E. Upfal. Efficient Discovery of Association Rules and Frequent Itemsets through Sampling with Tight Performance Guarantees. *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML PKDD), pp. 25–41

2012   * A. Pietracaprina, G. Pucci, **M. Riondato**, F. Silvestri, and E. Upfal. Space-round Tradeoffs for MapReduce Computations. *Proceedings of the 26th ACM International Conference on Supercomputing* (ICS), pp. 235–244

2012   M. Akdere, U. Çetintemel, **M. Riondato**, E. Upfal, and S. B. Zdonik. Learning-based Query Performance Modeling and Prediction. *Proceedings of the 28th IEEE International Conference on Data Engineering* (ICDE), pp. 390–401

2011   **M. Riondato**, M. Akdere, U. Çetintemel, S. B. Zdonik, and E. Upfal. The VC-dimension of SQL Queries and Selectivity Estimation through Sampling. *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML PKDD), pp. 661–676

2011   M. Akdere, U. Çetintemel, **M. Riondato**, E. Upfal, and S. B. Zdonik. The Case for Predictive Database Systems: Opportunities and Challenges. *Proceedings of the 5th Biennial Conference on Innovative Data System Research* (CIDR), pp. 167–174

Tutorials

2016   * F. Bonchi, G. De Francisci Morales, **M. Riondato.** Centrality Measures in Big Graphs: Exact, Approximated, and Distributed Algorithms. WWW'16

2015   **M. Riondato** and E. Upfal. VC-Dimension and Rademacher Averages: From Statistical Learning Theory to Sampling Algorithms. ACM KDD'15, ECML PKDD'15, ACM CIKM'15

AWARDS

2016   Best Student Paper Award (Research Track) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'16)

2014   Nominated for the ACM SIGKDD Doctoral Dissertation Award

2014   Best Student Poster Award at SIAM International Conference on Data Mining (SDM'14)

GRANTS AND FELLOWSHIPS

2015   SIAM/NSF Early Career Travel Award to SIAM Intl. Conference on Data Mining

2014   SIAM Travel Award to SIAM Intl. Conference on Data Mining

2014   Brown University Dissertation Fellowship

2013   Yahoo Research Barcelona Summer Internship

2011   Italy MIUR Research Fellowship

2009   Brown University Graduate Fellowship

INVITED TALKS

2016   Approximating Betweenness Centrality through Sampling with the Rademacher Averages, Boston University, Boston (MA, USA), November 18

2016   Algorithmic Data Science = Theory + Practice, IEEE MIT Undergraduate Research Conference, Massachusetts Institute of Technology, Cambridge (MA, USA), November 5

2016   TRIÉST: Counting Local and Global Triangles in Fully-dynamic Streams with Fixed Memory Size, Database Group Meeting, Carnegie Mellon University, Pittsburgh (PA, USA), October 24

2016   Approximating Betweenness Centrality through Sampling with the Rademacher

Averages, Network Science Institute, Northeastern University, Boston (MA, USA), October 17

2016   Graph Summarization with Quality Guarantees, Department of Information Engineering, University of Padua, Padua (Italy), September 26

2016   ABRA: Venice, Sampling, and Betweenness Centrality Estimation, Social Impact through Network Science (SINS), Venice (Italy), June 8

2015   Data is..., Stevens Institute of Technology, Hoboken (NJ, USA), December 12

2015   Travel Pictures from Another World: Statistical Learning Theory Meets Data Mining, Monash University, Melbourne (Australia), October 28

2015   Modern Sampling for Modern Data: The Case of Frequent Itemsets Mining, Two Sigma Investments, New York (NY, USA), March 5

2014   Statistical Learning and Data Mining: A Lasting Marriage, Data Mining: Beyond The Horizon Workshop, University of Bristol, Bristol (UK), November 20

2014   Efficient Frequent Itemsets Mining through Sampling, Database Research Group Seminar, University of Waterloo, Waterloo (Canada), May 7

2014   Efficient Frequent Itemsets Mining through Sampling, Database Group Seminar, MIT CSAIL, Cambridge (MA, USA), April 10

2014   Taming the Challenges of Big Data with Statistical Data Analytics, Department of Computer Science, Boston College, Boston (MA, USA), February 7

2013   Fast Betweenness Estimation through Sampling, Data Management Group Seminar, Boston University, Boston (MA, USA), October 17

2013   Fast Betweenness Estimation through Sampling, Lab Research Seminar, Yahoo! Labs Barcelona, Barcelona (Spain), June 13

2013   Fast Betweenness Estimation through Sampling, Advanced Computing Group Talk, University of Padua, Padua (Italy), May 30

2013   Statistical Learning Theory meets Knowledge Discovery, Brown CS Industrial Partners Program Symposium, Providence (RI, USA), April 25

2011   Statistical Learning Theory meets Databases, Advanced Computing Group Talk, University of Padua, Padua (Italy), June 24

2010   Top-k Frequent Itemsets Mining through Sampling, Advanced Computing Group Talk, University of Padua, Padua (Italy), September 16

2010   Mining Top-K Frequent Itemsets Through Progressive Sampling, Chalmers University of Technology, Gothenburg (Sweden), August 5

ADDITIONAL RESEARCH EXPERIENCE

2012	Sapienza University of Rome (Rome, Italy) – Visiting Ph.D. Student, June–September
2011	University of Padua (Padua, Italy) – Research Fellow, June–September
2010	Chalmers University of Technology (Gothenburg, Sweden) – Visiting Ph.D. Student, August
2008–9	Brown University (Providence, RI, USA) – Visiting Student, October–June

TEACHING EXPERIENCE

Brown University

Optimization Methods in Finance – Instructor (spring 2016, spring 2017)

Probability and Computing – Teaching Assistant (fall 2010, spring 2012, spring 2013, spring 2014)

SERVICE TO THE SCIENTIFIC COMMUNITY

Program Committees

IEEE ICDE '17

WWW '17, '16

ACM WSDM '17

IEEE ICDM '16

ACM CIKM '16, '15, '14

Grace Hopper '16

ECML PKDD '16

ACM KDD '16, '15

Journal Reviewing

ACM Transactions on Information Systems (TOIS)

ACM Transactions on Knowledge Discovery from Data (TKDD)

Data Mining and Knowledge Discovery (DMKD/DAMI)

Engineering Applications of Artificial Intelligence (EAAI)

Expert Systems with Applications (ESWA)

Journal of Parallel and Distributed Computing (JPDC)

Knowledge and Information Systems (KAIS)

IEEE Transactions on Knowledge and Data Engineering (TKDE)

IEEE Transactions on Network Science and Engineering (TNSE)

IEEE Transactions on Parallel and Distributed Systems (TPDS)

IEEE Transactions on Services Computing (TSC)

Machine Learning (Mach. Learn.)

PLOS ONE

The Computer Journal

VLDB Journal (VLDBJ)

Conference Reviewing

ACM WSDM'17, SODA'17, IEEE ICDM'16, ACM CIKM'16, Grace Hopper'16, ECML PKDD'16, ACM KDD'16, WWW'16, ACM WSDM'16, ACM CIKM'15, ACM KDD'15, ISAAC'15, SIAM SDM'15, IEEE ICDE'15, ACM CIKM'14, DISC'14, ACM WSDM'14, WWW'14, ICALP'14, IEEE BigData'13, MFCS'13, ACM WSDM'13, IEEE IPDPS'12, ACM ICS'12, RANDOM'11

Conference Research Session Chair

ECML PKDD'16 (Graphs and Social Networks 1)

WWW'16 (Social Networks and Graph Analysis 1)

ACM KDD'15 (Social and Graphs 4)

Grant Reviewing

Sigma Delta Epsilon (Graduate Women in Science) National Fellowship

Grace Hopper Conference 2016 Scholarship

DEPARTMENTAL / UNIVERSITY SERVICE

Brown University Graduate Council – Student Representative, 9/2011 – 9/2013

Brown University Graduate Student Council – President, 4/2011 – 12/2012

Brown University Strategic Planning Committee on Doctoral Education – Student Representative, 9/2012 – 5/2013

Brown University New Scientist Program Graduate–Undergraduate Mentoring Initiative – Graduate Mentor, 9/2013 – 5/2014

ADDITIONAL TRAINING

2014   Brown University Harriet W. Sheridan Center for Teaching and Learning Teaching Certificate I: Reflective Teaching

2012   Summer School on Massive Data Mining, IT University, Copenhagen, Denmark

PROFESSIONAL MEMBERSHIPS

Association for Computing Machinery (ACM), 2012 – present
    Special Interest Group on Knowledge Discovery from Data (SIGKDD)
    Special Interest Group on Management of Data (SIGMOD)
    Special Interest Group on Algorithms and Computation Theory (SIGACT)

Institute of Electrical and Electronic Engineers (IEEE), 2012 – present
    IEEE Computer Society

Society for Industrial and Applied Mathematics (SIAM), 2012 – present
    SIAM Activity Group on Data Mining and Analytics (SIAG/DMA)

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